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RESEARCH APPROACHES

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    - a. Screening
    - b. Training

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#### RESEARCH APPROACHES

#### <u>Objective</u>

A comprehensive program is proposed that is based on information derived from SRI experimentation and the documented work of others.

The goals of the program are twofold:

- To establish the repeatability of the psychoenergetic process and the statistics that govern its usefulness for various applications
- To determine the underlying physical characteristics of the channel, such as bit rate, channel capacity, and resolution potential.

## A. Characteristics, Analysis, and Theory

- 1. Characteristics
- a. Remote Viewing Reliability Enhancement (Coding)

One of the most successful psychoenergetic processes is the remote viewing of target locations demarcated by some means, such as the presence at the site of an individual known to the "viewer". Unfortunately, this process—which works so well—results in narrative description that is difficult to assess in a quantitative manner.

In order to utilize the remote sensing phenomena as a tool to investigate the physical and psychological parameters of psychoenergetic processes, it is important to establish optimum analysis (judging) procedures. Because experiments are designed with the goal of varying specific parameters, such as subject shielding or the necessity of feedback, the analysis or judging procedure must be as rapid as possible, while retaining objectivity, if

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immediate feedback to both subject and experimenters is to be provided.

A judging procedure will be established and experiments will be carried out to evaluate the proposed judging procedure. If successful, such a procedure will provide information on subject reliabilities with respect to various categories of response, and will thus be useful in assessing channel reliability.

# b. Role of Feedback in Remote Viewing

In past programs two series of experiments have been conducted with experienced remote viewing subjects to determine the effects of withholding feedback. Both of these series failed to give a single successful outcome in the no-feedback condition. This result offers strong evidence that feedback is an essential element for successful remote viewing, whether the reasons be psychological or physical. The next appropriate series of experiments with these normally successful subjects is to intermix, on a random schedule, feedback and no-feedback trails, to eliminate any effect of psychological expectation that a subject might have with regard to a given trail being carried out without feedback. If again no success is found in trials without feedback while the subjects continue to demonstrate successful remote viewing in those experiments with feedback, this would indicate that there was some substantive, perhaps physical, basis for the effect of feedback on the experiments.

# c. Role of Consciousness (Computer-Controlled Experiments)

If it should turn out that the subjects under the conditions of the previous experiment exhibit success in remote viewing independently of the feedback condition, then a further experimental series would be carried out to define more precisely the role played by feedback. In this case a subject would be asked to describe pictorial material presented by a distant slide projector. (Experiments were carried out in a pilot study and were found to be successful.)

The outcome of experiments of this type is important with regard to assessing the reliability of information obtained under conditions in which feedback is minimal. As a side benefit, the protocol as outlined can yield information as to resolution (depending on size of slide projection) and enhancement factors associated with the presence or absence of individuals knowledgeable of the target. Finally, the data obtained provide for evaluation of the feasibility of using slide targets as a medium for a practical communication system. If the use of slide targets is successful, a standard demonstration experiment would be developed so that the communications system could be observed by outside evaluation teams.

## d. Tracking of Targets in Motion

It has been pointed out by several sources that some operators of fire-control radar displays can continue to make correct judgements even when their scope is "white" with chaff and jamming. The conjecture is that they either obtain subliminal information that the untrained observer cannot see, or that there is a paranormal component to their perception.

An attractive way to investigate this phenomena with regard to the paranormal hypothesis would be to generate a CRT display showing clouds with a superimposed grid. An invisible target airplane can be programmed

to circumnavigate the display in a randomly-determined manner. The task of the operator would be to activate a light-pen gun over the square where he senses the plane to be, at which time the plane's location is made visible for a short feedback interval. This computer-controlled game would test, record, and provide immediate feedback to the user. If tracking of this nature is a learnable skill, the protocol of feedback and immediate reinforcement should allow learning to take place.

# e. Measurement of Accuracy as a Function of Repetition Rate

The rate at which trails in a paranormal experiment are conducted appears to strongly affect the success of the experiment. The success of subjects increases in direct proportion to the time between experiments. From data including card guessing, remote viewing, and picture drawing experiments, the common finding suggests that if the targets are presented too rapidly in time, a temporal contamination of neighboring stimuli occurs. In the annals of psychical research this has been called displacement. A typical example is afforded by repetitious slide experiments in which a subject gives an excellent description of a remote slide that has not yet been illuminated, or a description of one which has been illuminated but not yet shown to the subject, thereby missing the real-time target. A corollary is that displacement phenomena must be inhibited for successful real-time psychoenergetic functioning to occur.

Tart has a theoretical explanation for this effect, which he draws from conventional physiology. He calls this phenomenon "Trans-Temporal Inhibition," and offers the following explanation:

## Trans-Temporal Inhibition

"What I am postulating, then, is an <u>active inhibition</u> of the precognitively and post-cognitively gained information about immediate future and immediate past, in order to enhance the detectability of ESP information about real-time events. Since this inhibition extends over time, I have named this phenomenon <u>trans-temporal inhibition</u>.

Except for the unusual features of extending over time rather than space, trans-temporal inhibition is analogous to a widely used information processing strategy in the nervous system called lateral inhibition. This is a general phenomenon of a highly stimulated receptor sending out inhibitory impulses to receptor endings laterally/ spatially adjacent to it, thus suppressing their initially weaker output, unless they are also strongly stimulated by an appropriate stimulus. It amounts to an edge detection process. To illustrate: If you press on your skin with a sharply pointed object, not only is the touch receptor immediately under the point strongly stimulated, but, because of the mechanical deformation of the skin, receptors laterally adjacent to the point are also stimulated, although less intensely. The neural impulses resulting at the first stage of detection, then, would be most intense immediately under the stimulated point, but fairly intense on each side of it, gradually tapering off, producing a neural signal pattern suggesting a blunt, rounded stimulating object, rather than a point. The most stimulated receptor under the point, however, sends out inhibitory impulses suppressing the weaker (less frequent) impulses from the laterally adjacent receptors, and so recovering a

pattern indicating point stimulation further on in the nervous system. The phenomenon of trans-temporal inhibition, then, suggests that a generally useful information processing procedure is also operative for psychoenergetics.

In order to investigate this conjecture, the results of experimentation under way for other purposes would be analyzed for the displacement phenomenon as a function of inter-experiment temporal spacing.

#### 2. Analysis

In remote viewing experiments, the final output is typically a tape recording and a written transcript, in which the subject relates his perceptions and experiences with respect to the remote site that he is attempting to describe. It is becoming apparent that some portions of a subject's output are more reliable than others. For example, when a subject describes something at the site as being very surprising to him, it can usually be found at the site. When the subject assigns a name to the site, or a specific function, it is usually incorrect. Similarly, when motion is perceived at the site, this perception is usually correct. In some instances, a change in the tone of voice of the subject is an indicator that the material being described is more (or less) likely to be correct.

In addition, certain descriptive aspects of remote sites are usually described correctly, such as whether they are indoors or outdoors, whether the light is bright or dim, or whether the outbound experimenters at the site are active or passive. These dichotomies have already been codified in preliminary attempts to quantify remote viewing for the purpose of sending messages.

A systematic analysis of transcripts and tapes could greatly increase the accuracy of information obtainable from this type of experiment, and therefore extensive transcript analysis could profitably be carried out on the data base generated to date. This could include such speculative procedures as voice stress analysis of the tapes.

#### 3. Mechanisms

#### a. <u>Theoretical Studies</u>

To date, three basic physical models have been proposed to describe paranormal functioning on the basis of present theory or reasonable extensions of same. These are the ELF (extremely low frequency) electromagnetic hypothesis, the quantum correlation hypothesis, and the extradimensional hypothesis.

The ELF hypothesis suggests that psychoenergetic processes are carried by electromagnetic waves in the frequency region below 1 kHz.<sup>2-5</sup> Experimental support for this hypothesis is claimed on the basis of lower-than-inverse-square attenuation, low bit rates, and ineffectiveness of ordinary electromagnetic shielding; factors (among others) apparently common to both ELF and psychoenergetic processes. The quantum correlation hypothesis stems from the recognition that a theory of reality compatible with quantum theory cannot require spatially separated events to be independent, <sup>6-6</sup> but must permit interconnectedness of distant events in a manner that is contrary to ordinary experience.<sup>9,10</sup> The extradimensional hypothesis is based on the ideas of Targ, Puthoff, and May (SRI), G. Feinberg (Columbia University), and E. Rauscher (University of California Lawrence Berkeley Laboratory) pertaining to the use of extra spatial and temporal dimensions to provide a space-

time metric especially suitable for describing psychoenergetic processes. 11

A set of studies will be formulated to provide a series of predictions around which experiments can be designed, and thus provide for the necessary differentiation among competing models for psychoenergetic mechanisms. Such work would be pursued by both SRI personnel and by consultant theoretical physicists; it will be collated by SRI.

### b. ELF Experiments

The objective of these experiments to determine the extent to which the demonstrated remote viewing ability of an experienced subject is degraded by placing him in electrically shielded environments such as mu-mutal chambers or submersibles.

# c. Subject-Induced Equipment Perturbation Effects

The study of human/machine interactions as a psychoenergetic process has posed great difficulties for serious investigators. Among these difficulties are the combined facts that the reported effects tend to be small, and that the local environment has rarely been monitored for causes other than the proposed psychoenergetic ones. In addition, one finds that the strongest effects are reported as occurring with the most controversial and/or suspect subjects. Out of this collection of questionable experimentation (and often poor reporting) emerge, however, a few provocative experimental results that suggest that further careful examination may be worthwhile and possibly rewarding. Such studies would provide valuable data for assessing whether the area of subject-induced equipment perturbations constitutes a useful area for inquiry.

## (1) Strain Gauge Experiments

Professor John Hasted, Birkbeck College, University of London, has observed inelastic and elestic deformations of metal bars by some kind

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of remote human interaction. During these experiments the subjects are reported to cause effects without any physical contact with the metal.

In an effort to replicate Professor Hasted's results, an electrically shielded enclosure has been constructed having more than 135 dB RF attenuation from 10 kHz to 10 MHz and plexiglass sides (to shield against air currents). Within this enclosure is an experimental system of resistive strain gauges attached to a thin metal bar. These are wired as a temperature-compensating bridge and connected to battery-operated amplifiers and recording instruments. Detection can be made of changes in the length of the bar on the order of 500 angstroms and applied transverse forces of approximately 100 mg. To date, SRI has been successful in isolating and correcting several sources of artifact, and have obtained hours of artifact-free baseline operation. All of the data will be magnetically recorded for later computer analysis, and a simple stripchart record will provide immediate feedback to the subject of any changes in the bar. Experiments are proposed to task subjects to attempt to perturb the isolated metal bar.

Should experimentation reveal genuine subject-induced perturbations, determinations will be made as to whether such effects can be used as a message-transmission device (remote telegraph).

#### (2) Random Number Generator Experiments

Another class of experiments that have been extensively reported are those that involve alleged human/machine interaction with electronic random-number generators. In these experiments, digital electronic noise derived from a thermal noise source of from the decay of a radioactive material is monitored while a subject is attempting to alter the

statistical properties of the noise distribution. The usual protocol involves providing visual and audio feedback signals, proportional to various statistical parameters, to a subject who is asked in a biofeedback scenario to concentrate upon the feedback signals and to alter them in a prescribed way. To date, there have been 54 such experiments reported in the literature, 12 of which 35 report statistically significant effects, while none of these studies show similar departures from radomness during control runs without intended influence.

SRI is presently in the design stage of a micro-processor-based random-number generator. Plans are to use three fundamentally different sources of random events to derive the digital electronic noise signal. The first of these is a diode designed by R. H. Haitz, 13 that is completely understood from both the quantum mechanical and solid state construction point of view. A second fundamentally different source of random events is to be derived from the decay of a single-transition beta emitter. Lastly, the entire system can be checked against a pseudorandom shift register, that constitutes a third source of random events. This latter has the property that a long string of bits appears random, yet once the shift register is reinitialized it produces the identical random sequence once again.

The instrument is under control of a microprocessor that records data on magnetic tape for later analysis, and controls a printing I/O statistical calculator that provides immediate results for feedback. Once the instrument is complete, it will be exhaustively tested for possible artifacts resulting from environmental conditions.

This instrument will be used first to attempt to confirm the existence of the claimed phenomenon, and, if it is confirmed, to investigate theoretical implications with regard to various modes of human/machine interaction. Assuming that an effect can be stabilized, this microprocessor-based system can easily be reprogrammed to utilize coding techniques (described earlier) to construct a "remote" telegraph communication system.

#### (3) <u>Magnetometer Experiments</u>

One of the first intentionally induced physical perturbation
effects observed by SRI personnel was the apparent perturbation of
a superconductor-shielded Josephson effect magnetometer by two
subjects who performed successfully in remote viewing experiments.
Intentions are to carry out further experimentation with a sensitive
Josephson junction cryomagnetometer, a commercial instrument manufactured
by Superconducting Technology, Inc., Mountain View, California (Model
A201 magnetometer, employing an A401 SQUID sensor, A310 RF amplifier,
and removable superconducting shield).

Experimentation with such instrumentation requires the following steps:

- (1) Obtain calibration data in control runs to establish baseline runs to establish baseline performance of the magnetometer in the absence of any subject.
- (2) Repeat above with various subjects present, but passive, to establish background of perturbation effects in the presence of

subjects not engaging in volitional efforts to perturb magnetometer system.

- (3) Carry out controlled experimental runs based on effort/
  non-effort periods being determined by random number generator to
  provide statistical control. Make multiple recordings to investigate
  "recorder only" effects, and conduct automated statistical analysis
  (FFT, spike train analysis, etc.) of the magnetometer output to
  determine the signature of subject-produced effects.
- (4) If perturbation effects are observed, interposition of distance and shielding in a systematic way to determine dependence of these factors.

In addition to the possible use of sensitive instrumentation as targets for active perturbation efforts in, for example, a communication link, such study offers the potential for determining the use of such instrumentation as passive detectors of remote viewing phenomena ("intrusion detection").

### B. Psychophysiological Correlates

## 1. Physiological Measures of Psi-Conductive States

In recent years, behavioristically oriented scientists have suggested that in addition to obtaining overt responses such as verbalizations or key presses from a subject, it should be possible to obtain objective evidence of psychoenergetic activity by direct measurement of some physiological parameter of a subject.

Experiments will be formulated where a subject is closeted in an electrically shielded room while his EEG is recorded. Meanwhile, in another laboratory, a second person is stimulated from time to time, and the time of that stimulus is marked on the magnetic tape recording of the subject's EEG. The subject does not know when the remote stimulus periods are, as compared with the nonstimulus periods. Evidence for systematic changes in EEG correlated with the remote stimuli are then sought.

These physiological measures will be used as a potential signaling channel for information transfer, but a more important application of this output would be as feedback to the subject, so that he could learn to recognize his own optimal state of mind for success in a psychoenergetic task.

#### 2. Environmental Factors

## a. <u>Altered States of Consciousness: Special Environments</u>

For the entire history of psychoenergetic research there has been keen interest in optimizing the physical and psychological conditions for a subject during an experiment.

Therefore, it is desirable to conduct experiments with trained, high-scoring subjects to examine the effects of other factors which might provide psychological conditions conducive to high-quality psychoenergetic functioning (e.g., sensory isolation, free-fall conditions in space, etc.).

## b. Examine the Part Played by the Experimenter

From the work of Professor Robert Rosenthal at Harvard it is clear that there is a strong difference in the outcome of some psychology experiments, depending on who conducts the experiment. This so-called experimenter effect has been the subject of investigation for the past 15 years in an attempt to find means to objectify some of the principal findings of conventional perceptual and behaviorial psychology. We are not suggesting that this experimenter effect in psychology is due to paranormal influences, but rather than some of the inability to replicate psychoenergetic experiments of one laboratory, when the experiments are transferred to another laboratory, might be due to subtle experimenter effects of the type known to occur in psychology and behavior experiments in general.

It is important to find out if the success or failure of psychoenergetic experiments relate to the experimenter effect through interpersonal interaction, subliminal cueing, or some as-yet uncataloged factor.

- 3. Educational Procedures
- a. <u>Screening</u>

Information from East Bloc researchers, and Soviet researcher I. M. Kogan indicate that the USSR has established a significant nationwide testing program to identify psychically gifted young people. It is now generally agreed that psychic functioning is an innate or latent ability, somewhat similar to musical talent. That is, all people have it to some degree, but there is a wide range of abilities from the psychically tone deaf, to the virtuoso performer. It would be the goal of a screening program to locate and recruit the most psychically talented individuals available, both to obtain a measure of the range of abilities that exists, and also to make use of these abilities to further increase our understanding of the phenomenon.

(1) Explore Training Techniques with Children, the Blind, and Other Special Subjects

Although there is strong laboratory evidence for psychoenergetic functioning in a great number of individuals, psychic functioning is not yet widely accepted and utilized in the society at large. One conjecture for the reason that there is not more day-to-day evidence of this ability is that it is a forbidden activity, largely suppressed in our society. It is further conjectured that psychic functioning may be easier to elicit from children, who have not yet "unlearned" the use of this otherwise natural ability. Therefore, we would anticipate that part of any program effort would be directed toward work with children in order to test this hypothesis.

Similarly, if the hypothesis of societal inhibition against the use of psychic functioning is correct, a group of adults likely to have overcome it to some degree would be the blind, since it would be greatly advantageous to them to have additional means of gaining information about their environment. A remote sensing experiment has been conducted with one blind individual and he was found to be an excellent subject.

In addition, work with the blind people may provide an opportunity to observe underlying parameters of paranormal perception at a more primary level, since individuals lacking sight may be less conditioned by the visual learning modalities characteristics of our society.

Investigation with both children and blind subjects would constitute a valuable addition to any continuing effort to screen the population for high-performance subjects.

### (2) Distance Experiments with Identical Twins

Identical twins have become an enigma to modern psychoenergetic research. Although there is copius anecdotal material attesting to the existence of a paranormal rapport between distantly separated twins, this alleged linkage has resisted laboratory confirmation.

Identical twins often express the opinion that they have a sensitivity to the feelings, dangers and traumas experienced by each other, and many such instances have been well documented in the parapsychological literature. However, it is interesting that these same twins tend to perform at chance levels when tested with standard testing materials, such as cards and pictures. Meaningful use can

be made of the possible unique psychological and physiological relationship existing between twins, by having them participate in experiments of the remote viewing type in which there is a high yeild of success generally. If an exceptionally high degree of success with twins taking part in remote viewing experiments was forthcoming, perhaps new measures of the limits of resolution could be obtained from such an effort.

It appears that the lack of accuracy in the remote viewing protocol comes not so much from the lack of perception by the receiver, but rather from his or her inability to render the preconscious images without distortion. It is possible that twins share a common fond of such images and image-processing mechanisms, and therefore could provide increased resolution and analytic content, as compared with relative strangers who typically make up the remote viewing duo.

- b. Training
- (1) Training in Perceptual Tasks Paralleling Ordinary Perception

SRI in their laboratory carried out a series of communication experiments involving the transmission, from one laboratory to another, of simple shapes (e.g., T, 0,  $\Delta$ ), which also were of different colors for each shape. These tests were initiated in an effort to assess reports of Soviet work in this area, which include the transmission of decimal numbers via a psychoenergetic channel, with a claimed yield of 105 out of 135 decimal digits 0-9 (p $\sim$ 10 $^{-77}$ ).15

The communications series was designed to determine whether a gradient series of perception tasks that mimic the known development of ordinary perception would be useful in the development of paranormal perception. The decision to follow such a protocol was derived from data indicating that the laws of paranormal perception are congruent with, rather than skew to, the laws that govern ordinary perception, especially under conditions of subliminal presentation. The particular question examined was whether a specific perceptual orientation process known to hold in ordinary perception of color, would hold in the case of paranormal perception as well. The perceptual process of interest was the well-documented scale of increasing sensitivity to color tones. Cross-cultural studies of 98 separate linguistic stocks indicate that perception of color tones in the environment begins with discrimination first of black and white (dull/bright); then red is identified as a color; then yellow followed by green or green followed by yellow; then blue; brown; and finally purple, pink, orange, grey. 16

With the hypothesis that a similar gradient is followed in the development of paranormal perception, subjects were asked to differentiate among simple remote color card targets first on the basis of the dichotomy dull/bright, then with regard to shape, and only finally with regard to color. Specifically, subjects were encouraged to reject premature mental discrimination processes based on color recognition, which, by the hypothesis under tests, we would assume to be imaginative overlay from the already highly developed ordinary perceptual modes.

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Numerous data were gathered with two subjects who were experienced remote viewers. Analysis of the data, which shows learning in both cases, provides initial support for the hypothesis that progress in paranormal perception can be made on the basis of training drills designed from what is known about ordinary perception.

The purpose of this kind of training is the development of excellent and reliable paranormal perception of analytic and other alphanumeric types of target material.

Two extensions of this work are proposed: (1) Novice, as opposed to experienced, subjects will be tested on the protocol established above to determine whether they also show improvement in remote perception skills; and (2) additional protocols based on factors known to be important in ordinary perception will be designed and evaluated by further testing with experienced subjects.

(2) Training in Abstract Targeting, Including Geographical Coordinates

To date, two subjects have unmistakably demonstrated their ability

to describe distant locations, given only the map coordinates (latitude
and longitude) of a target site. Other subjects have attempted similar

tasks with mixed results.

One notable difference between the two groups is that the successful group ran through practice training procedures involving about 100 sites taken from an ordinary atlas. Therefore, it is proposed that a similar procedure be applied with new subjects to evaluate whether such a procedure might result in the development of a training protocol of general use. Should improvement be forthcoming on this basis, novice subjects would also be tested and evaluated utilizing the same protocols.

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Additional variations on the theme of abstract targeting would include targeting on the basis of pictures or maps of the target site (with and without key elements missing).

The goal of these efforts is to evaluate potential training protocols of wide applicability. Should such a program be successful, it would eliminate dependence on a select group of naturally gifted individuals, a group that is inadequate in number for large-scale exploration of the field's potentialities.

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